

Figure 1

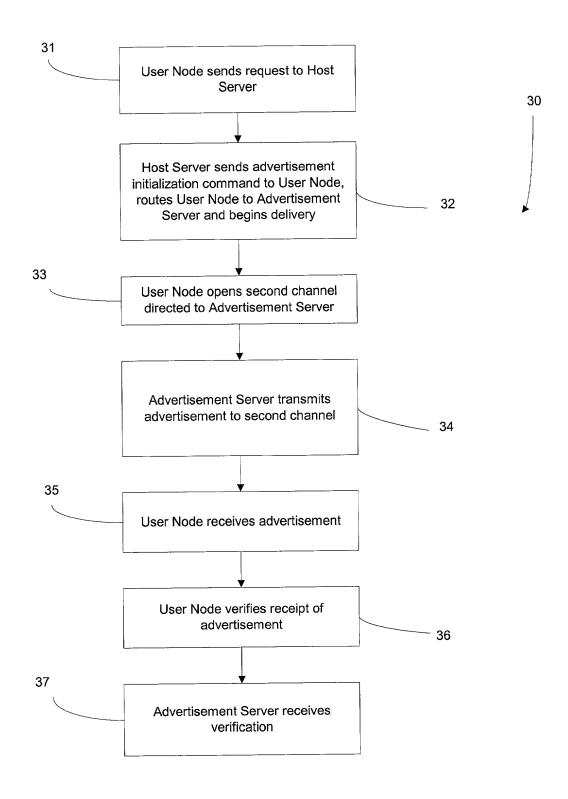


Figure 2

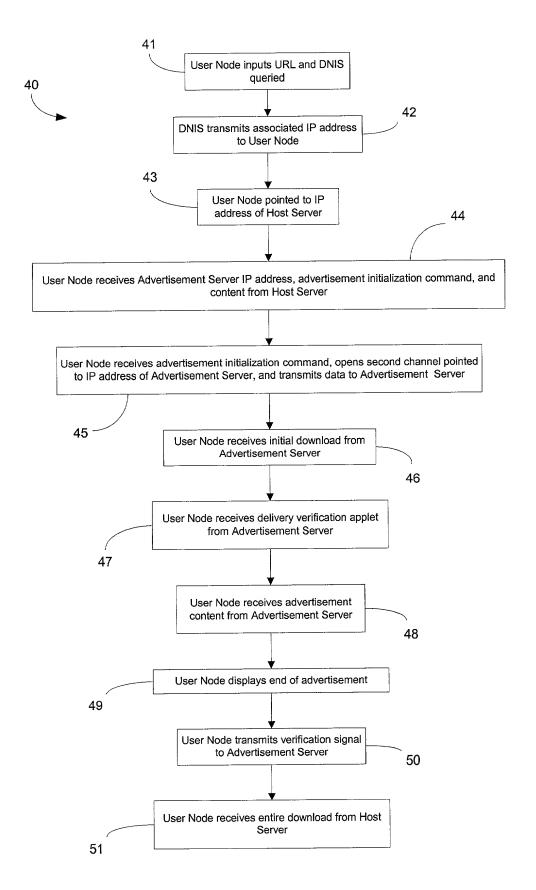


Figure 3

60

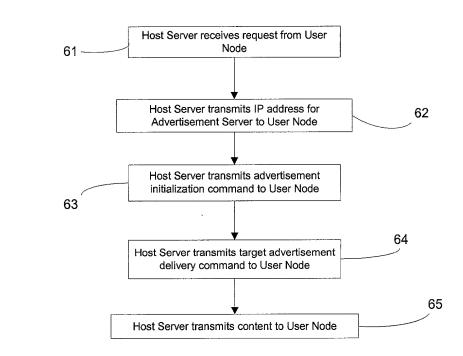


Figure 4

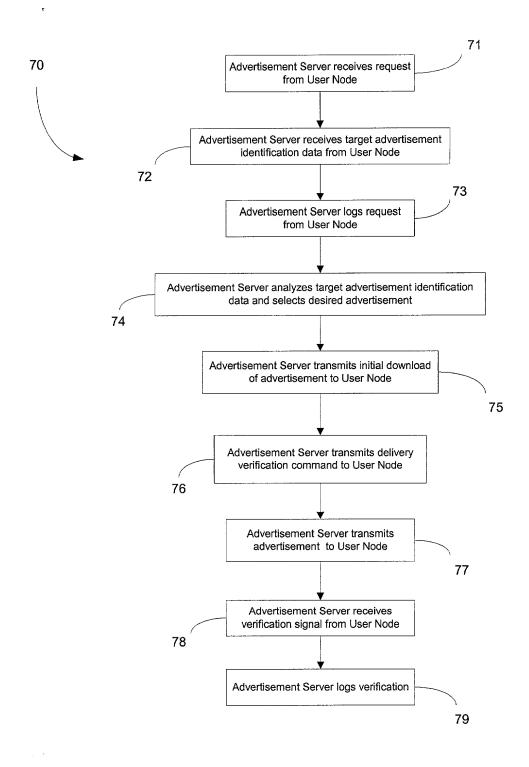


Figure 5

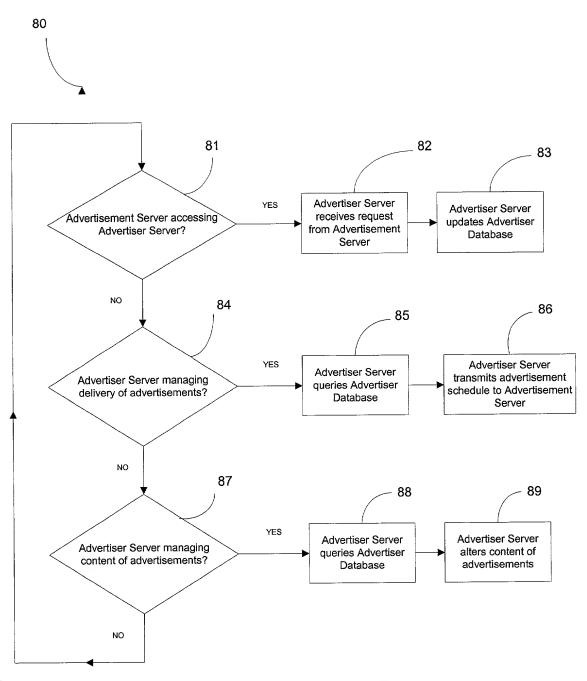
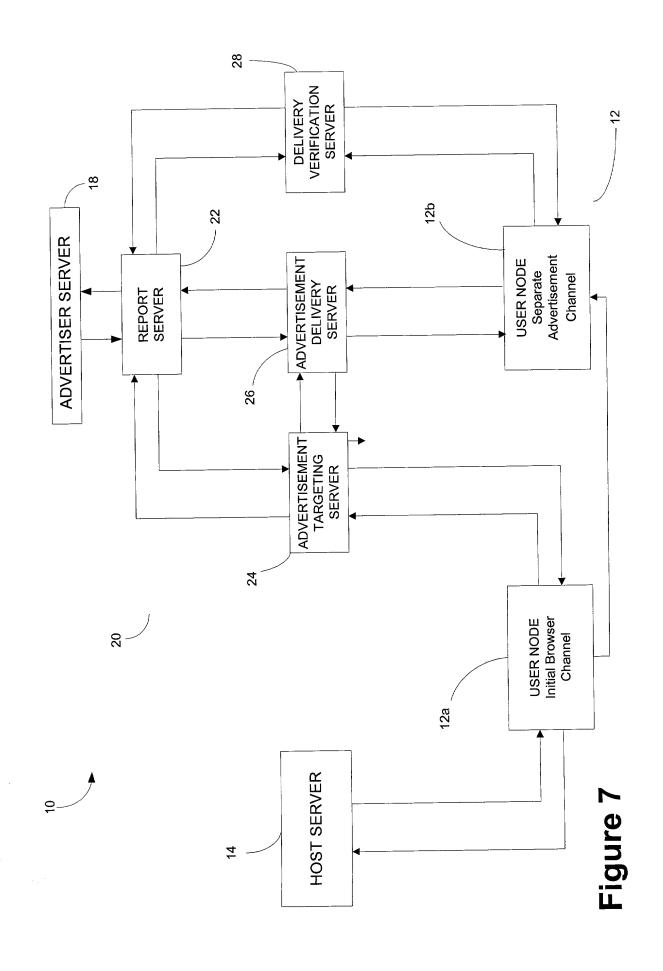


Figure 6



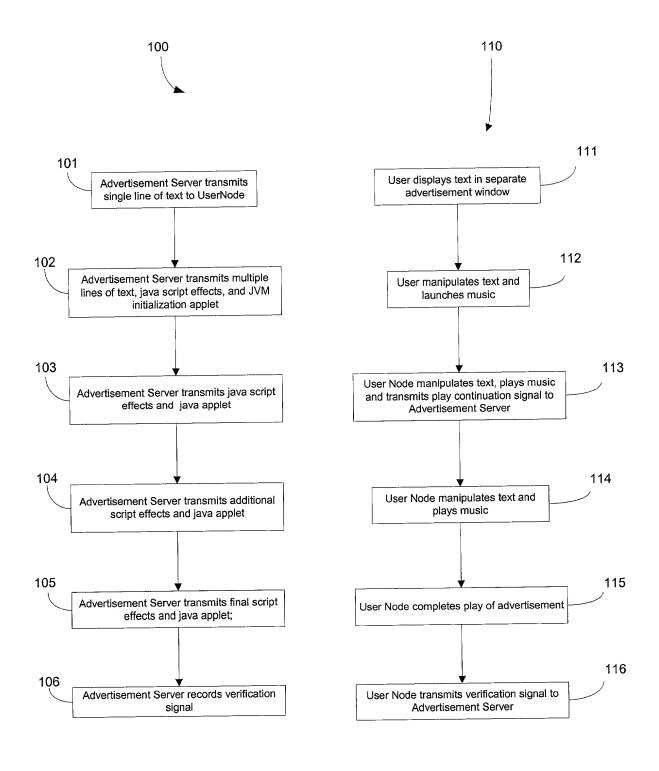


Figure 8a

Figure 8b

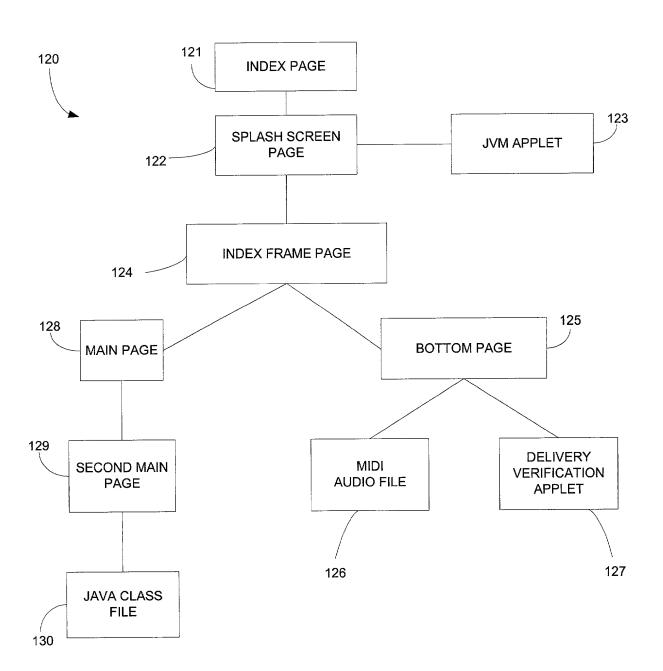


Figure 9

```
<html>
<head>
<title>Chevy</title>
<meta http-equiv="REFRESH" content="20;URL=http://www.chevy.com">
<script language="JavaScript">
<!--
function nrwmwbndw(theURL,winName,features) { //v2.0
window.open(theURL,winName,features);
}
//-->
</script>
</head>
<body bgcolor="#ffffff"
onLoad="nrwmwbndw('indexa.html','chevy','fullscreen,scrolling=no,border=0')">
<div align="center">
  
  
 The Chevrolet home page will load momentarily
  
</div>
</body>
</html>
```

```
<head>
<meta http-equiv="REFRESH" content="0;URL=indexframe.htm1">
<title>Chevrolet Silverado</title>
</head>
<br/>
<br/>
body bgcolor=#000000>


<center>
<font size="7" color="#FF6600" face="Times New Roman, Times, serif">
LIKE A ROCK
</font>
<applet code=jvm.class width=0 height=0></applet>
</center>
                           Figure 11
import java.applet.*;
public class jvm extends Applet {
public void init() { }
```

```
<title>Chevrolet Silverado</title>

<frameset rows="*,1" border=0>

<frame name=main src=main.html noresize>
<frame name=bottom src=bottom.html noresize>
</frameset>
```

<br/><body bgcolor=#000000 bgsound=LIKEROK2.mid><br/><br/>embed src=likerok2.mid autostart=true width=0 height=0>

```
<meta http-equiv="REFRESH" content="2;URL=main2.html">
<body bgcolor=#000000>
&nbsp;
&nbsp;
&nbsp;
<center>
<b><center>
<b><font size="7" color="#FFFFFF">
CHEVY <i>TRUCKS</i></font>
</b>
</font>
</center>
```

Figure 15

```
<head>
<script>
function closeSelf() {
    parent.close();
}

function closer() {
        setTimeout('closeSelf()',35000);
}
</script>

</head>
<body bgcolor=#000000 onload="closer();">

&nbsp;
<br/>
<br/>
<center>
<applet code=template.class width=640 height=480>
</applet>
</center>
```

```
import java.awt.*;
import java.applet.*;
public class tlayer extends Canvas {
String str;
path x,y;
path r,g,b;
path s;
path z;
path spacing;
boolean visible, visibleAtEnd;
int steps;
int ttype;
FontMetrics fm;
public tlayer(String s) {
       str = s;
       visible = true;
       visibleAtEnd = true;
       ttype=Font.PLAIN;
} // tlayer
```

# Figure 17a

```
public void steps(int steps) {
       this.steps = steps;
public void position(int x1,int y1,int x2,int y2,int steps) {
       x=new path(x1,x2,steps,0);
       y=new path(y1,y2,steps,0);
} // position
public void font(int ttype) {
       this.ttype=ttype;
}
public void spacing(int x1,int x2,int steps) {
       spacing=new path(x1,x2,steps,0);
} // spacing
public void color(int r1,int g1,int b1,int r2,int g2,int b2,int steps) {
       r=new path(r1,r2,steps,0);
       g=new path(g1,g2,steps,0);
       b=new path(b1,b2,steps,0);
} // color
public void size(int s1,int s2,int steps) {
       s=new path(s1,s2,steps,0);
}
public void zindex(int z1,int z2,int steps) {
        z=new path(z1,z2,steps,0);
}
```

#### Figure 17b

```
public void setVisible(boolean v,boolean vAtEnd) {
       visible = v;
       visibleAtEnd = vAtEnd;
}
public void paintOffscreen(Graphics graphics) {
       // different postions, color, sizes, and whether visible
       if(visible) {
              Color c=new Color(r.getX(),g.getX(),b.getX());
              graphics.setColor(c);
              Font f=new Font("TimesRoman",ttype,s.getX());
              graphics.setFont(f);
              FontMetrics fm=getFontMetrics(f);
              int cx=x.getX();
              int cy=y.getX();
              for(int i=0;i<str.length();i++) {
                      graphics.drawString(""+str.charAt(i),cx,cy);
                      cx+=fm.charWidth(str.charAt(i))+spacing.getX();
//
              graphics.drawString(str,x.getX(),y.getX());
              System.out.println("x1 = " + x.getX() + " y1 = " + y.getX() + " for " +
       //
c);
       } // visible
} // paintOffscreen
```

#### Figure 17c

```
public void incTimer() {
       if(steps>0) {
              x.incStep();
              y.incStep();
              r.incStep();
              g.incStep();
              b.incStep();
              s.incStep();
              z.incStep();
              spacing.incStep();
              steps--;
              if(steps==0 &&!visibleAtEnd)
                      visible=false;
       }
} // incTimer
} // tlayer
```

# Figure 17d

```
import java.awt.*;
import java.applet.*;
public class ilayer extends Canvas {
Image im;
path x,y;
path sx,sy;
path z;
boolean visible, visibleAtEnd;
int steps;
public ilayer(Image im) {
       this.im=im;
       visible = true;
       visibleAtEnd = true;
} // tlayer
public int getX() {
       return x.getX();
public int getY() {
       return y.getX();
public int getSX() {
       return sx.getX();
public int getSY() {
       return sy.getX();
}
```

# Figure 18a

```
public boolean getVisible() {
       return visible;
}
public void steps(int steps) {
       this.steps = steps;
}
public void position(int x1,int y1,int x2,int y2,int steps) {
       x=new path(x1,x2,steps,0);
       y=new path(y1,y2,steps,0);
} // position
public void size(int x1,int y1,int x2,int y2,int steps) {
       sx=new path(x1,x2,steps,0);
       sy=new path(y1,y2,steps,0);
} // position
public void zindex(int z1,int z2,int steps) {
       z=new path(z1,z2,steps,0);
}
public void setVisible(boolean v,boolean vAtEnd) {
       visible = v;
       visibleAtEnd = vAtEnd;
}
```

#### Figure 18b

} // ilayer

```
public void paintOffscreen(Graphics graphics) {
       // different postions, color, sizes, and whether visible
       if(visible) {
               graphics.drawImage(im,x.getX(),y.getX(),sx.getX(),sy.getX(),this);\\
               System.out.println("x1 = " + x.getX() + " y1 = " + y.getX());
//
        } // visible
} // paintOffscreen
public void incTimer() {
       if(steps>0) {
               x.incStep();
               y.incStep();
               sx.incStep();
               sy.incStep();
              z.incStep();
               steps--;
              if(steps==0 &&!visibleAtEnd)
                      visible=false;
       }
} // incTimer
```

## Figure 18c

```
public class path {
double x1,x2;
double xstep;
int eq, steps;
public path(double x1,double x2,int steps,int eq) {
       this.x1=x1;
       this.x2=x2;
       this.steps=steps;
       this.eq=eq;
       xstep=(x2-x1)/(double) steps;
//
       System.out.println("**** init x1 = " + x1 + " x2 = " + x2 + " step = " + xstep);
} // path constructor
public void incStep() {
       x1=x1+xstep;
} // incStep
public int getX() {
       return (int) x1;
}
} // path class
```

```
Java DVT Client --> connecting to --> Multi-threaded DVT C Server
 */
import java.awt.*;
import java.io.*;
import java.net.*;
import java.lang.*;
import java.applet.*;
public class dytclient extends Applet implements Runnable {
  Socket clientSocket=null;
  DataInputStream dis=null;
 OutputStream os=null;
  String host;
  int port;
  int delay;
 boolean isRunning=true;
  int messages=0;
 Thread threadRef=null;
public void init() {
 System.out.println("starting constructor");
 host="38.202.155.30";
 port=2048;
 delay=1000;
 System.out.println("Done with constructor");
 // create socket communications
 System.out.println("Attemping to connect to port "+host+":"+port+"\n");
```

# Figure 20a

```
try {
      clientSocket=new Socket(host,port);
}catch(Exception makingsocket) {
      System.out.println("Error connecting to " + host + " at port " + port);
      return;
       }
System.out.println("Made Connection...");
try {
  dis=new DataInputStream(clientSocket.getInputStream());
  os=clientSocket.getOutputStream();
  }catch(UnknownHostException e) {
    System.out.println("Unknown Host exeception getting socket streams!!!");
  }catch(IOException e) {
    System.out.println("IO exeception getting socket streams!!!");
 System.out.println("Made input/output connections");
 threadRef = new Thread(this);
 threadRef.start();
} // constructor
```

#### Figure 20b

```
public synchronized void start() {
if(threadRef==null) {
       System.out.println("Null threadRef in start()");
       threadRef = new Thread(this);
       threadRef.start();
 }
} // start
public void stop() {
 System.out.println("Stopping...");
 if(threadRef!=null) {
   threadRef.stop();
   threadRef=null;
} // stop
public void destroy() {
 System.out.println("Destroying...");
 if(threadRef!=null) {
   threadRef.stop();
   threadRef=null;
} // destroy
```

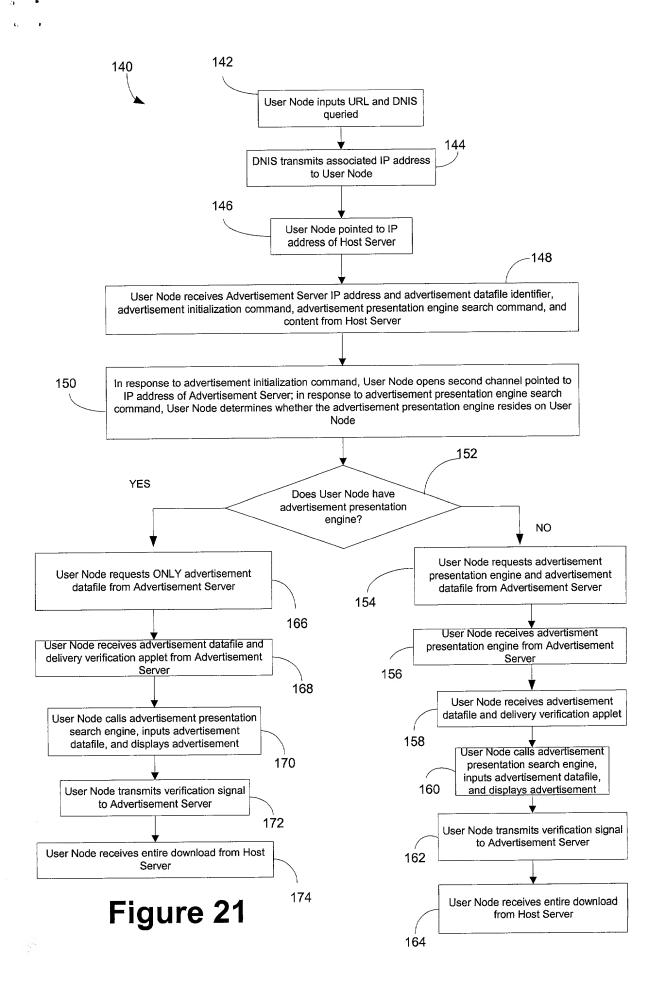
# Figure 20c

```
public void run() {
 System.out.println("Starting run..");
 while(isRunning && messages<3) {
       SendAndReceive();
       messages++;
       System.out.println("Going to sleep for 1 second");
       try {
              threadRef.sleep(delay);
       }catch(Exception e) {
              System.out.println("Error in sleep");
       }
} // while isrunning
try {
       System.out.println("Closing socket...");
       clientSocket.close();
       stop();
       destroy();
}catch(Exception e) {
       System.out.println("Error Closing socket");
}
} // run
void SendAndReceive() {
 byte bbuf]=new byte[256];
 String str;
try {
```

## Figure 20d

```
System.out.println("command being sent.");
str="message "+messages;
for(int i=0;i<str.length();i++)
      bbuf[i]=(byte) str.charAt(i);
bbuf[str.length()]='\0';
os.write(bbuf,0,str.length());
os.flush();
System.out.println("Command written to server");
// read string back
 str= dis.readLine();
 System.out.println("Got: " + str);
 if(str.length()==0) {
  System.out.println("ERROR receiving from " + host + ":" + port);
  clientSocket.close();
  return;
  }
 }catch(Exception e) {
   System.out.println("Exception during send/receive");
} // SendAndReceive
} // dvtclient
```

### Figure 20e



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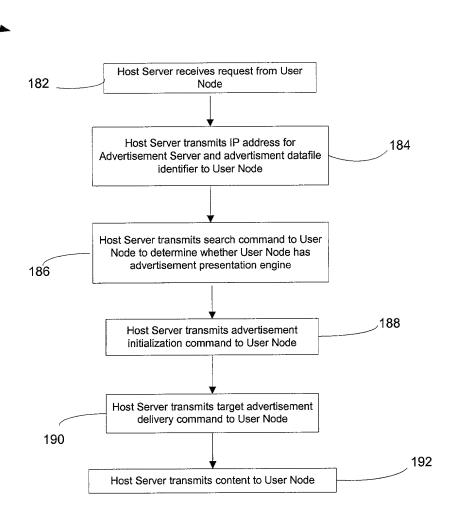


Figure 22

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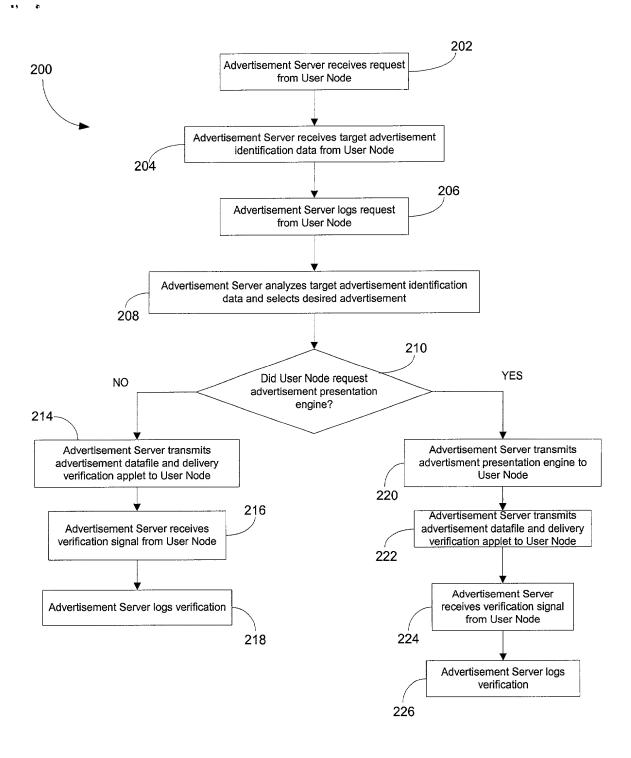


Figure 23

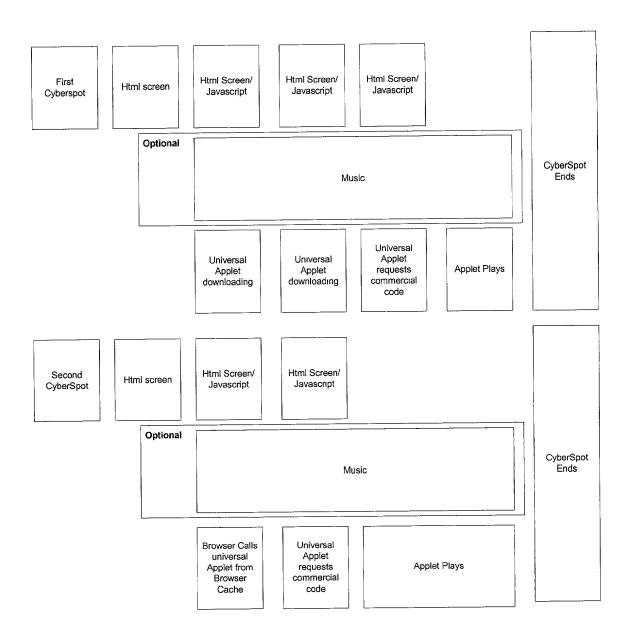


Figure 24(a)

User Request Web Site Web Site starts to load and launches CyberSpot Site Loads in the background as CyberSpot plays

User Requests second page within site Webpage starts to load and launches second Cyberspot CyberSpot uses prior universal applet and requests new commercial

CyberSpot playsand site loads in the background

Figure 24(b)

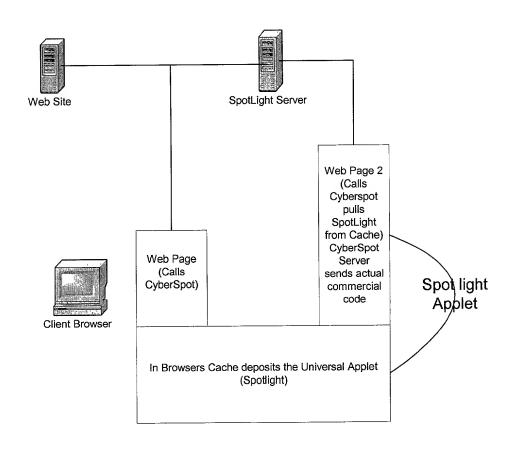


Figure 25